



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/574,686   | 04/05/2006  | Reinhold Schwalm     | 287738US0PCT        | 4204             |
| 22850  | 7590        | 06/23/2009           |                     |                  |
| OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.<br>1940 DUKE STREET<br>ALEXANDRIA, VA 22314 |             |                      |                     |                  |
| EXAMINER   |             |                      |                     |                  |
| GILLESPIE, BENJAMIN  |             |                      |                     |                  |
| ART UNIT   |             | PAPER NUMBER         |                     |                  |
| 1796   |             |                      |                     |                  |
| NOTIFICATION DATE  |             | DELIVERY MODE        |                     |                  |
| 06/23/2009   |             | ELECTRONIC           |                     |                  |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com  
oblonpat@oblon.com  
jgardner@oblon.com

### Office Action Summary

**Application No.**

10/574,686

**Applicant(s)**

SCHWALM ET AL.

**Examiner**

BENJAMIN J. GILLESPIE

**Art Unit**

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 April 2009.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 and 9-24 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-6 and 9-24 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO/CIS)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. The amendments filed 4/5/2008 have been noted - since claims 25 and 26 as well as the amendments to claim 1 were never previously presented - it is proper to make the current action final.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-6, 9-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The language "which is obtainable by" renders claim 1 indefinite because the suffix "able" when recited in conjunction with a process renders the claim indefinite since it is not possible to determine with certainty when such a claim is infringed, i.e. exactly when a product is "able" to be made by the claimed limitations. Furthermore, despite the lack of a positive recitation introduced by the word "obtainable by", it is noted that in the art-based rejection below, the limitations following "obtainable by" have been provisionally treated as being positively present in order to advance prosecution. However, applicant should consider replacing "obtainable by" with "obtained by" in order to overcome the rejection under 35 USC 112, 2nd paragraph.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
4. **Claims 1-6 and 9-24** are rejected under 35 U.S.C. 103(a) as being unpatentable over Baccei (U.S. Patent 4,309,526) in view of Schwalm et al (U.S. Patent 6,459,459).
5. **Regarding claim 1:** Baccei teach UV curable coatings comprising a mixture of (A) urethane acrylate and (B) reactive diluents (Abstract; col 6 lines 3-5, 62-65). In particular (A) is the reaction product of (Ai) aliphatic polyisocyanate, (Aii) hydroxyl (meth)acrylate, and (Aiii) polytetrahydrofuran diol having a molecular weight of at least 500 g/mol, wherein (Ai), (Aii), and (Aiii) are all present in so that there is an OH:NCO ratio of at least 1:1 (Col 2 lines 4-20; col 4 lines 9-26, 60-68). Component (B) consists of hydroxyl functional mono and bi-functional acrylates, however, Baccei fails to teach the claimed b) and c) components as well as their corresponding amounts.
6. Schwalm et al also teach UV curable coatings based on a mixture of (A) urethane acrylate (B) and reactive diluents (Abstract; col 6 lines 22-25). In particular, patentees explain that the reactive diluents consists of a compounds (Bi) such as 2-tetrahydropyranylmethyl acrylate and (Bii) such as ethylene glycol di(meth)acrylate (Col 2 lines 25-26; col 5 lines 13-67).

These (Bi) and (Bii) compounds are preferred over the reactive diluents disclosed by Baccei since they "harmonize" better with component (A), and maintain superior mechanical properties without "the expense of other properties" (Col 1 line 43-50, 64-67; col 2 lines 1-2).

7. Therefore it would have been obvious to replace the reactive diluents of Baccei for those of Schwalm et al since they are disclosed as being useful in an analogous composition, and one would be motivated to utilize the relied upon diluents since they provide a superior product.

8. **Regarding claims 2 and 6:** As discussed in paragraph 6, herein incorporated by reference, (Bii) comprises compounds such as ethylene glycol di(meth)acrylate.

9. **Regarding claim 3:** As discussed in paragraph 7, herein incorporated by reference, Baccei in view of Schwalm et al render obvious coating compositions comprising (A), (Bi), and (Bii). Moreover, Schwalm et al teach (A), (Bi), and (Bii) are all present in amounts ranging from 30-80 wt%, 10-80 wt%, and 0-40 wt% respectively (Col 2 lines 41-51). Therefore, it would have been obvious to arrive at the claimed ranges of a), b), and c) since they are disclosed by Schwalm et al as being the preferred amounts for (A), (Bi), and (Bii) respectively.

10. **Regarding claim 4:** Components d), e), f), and g) may all be present by 0 wt% and therefore are considered optional.

11. **Regarding claims 5 and 23:** As discussed in paragraph 7, herein incorporated by reference, Baccei in view of Schwalm et al render obvious coating compositions comprising (A), (Bi), and (Bii). What's more, component (Bi) comprises 2-tetrahydropyranylmethyl acrylate, tetrahydrofurfuryl acrylate, 4-tetrahydropyranyl acrylate or trimethylolpropane monoformal acrylate (Schwalm et al; col 5 lines 38-44).

12. **Regarding claims 9-22:** Examples 13 and 14 of Baccei teach the coating is applied to a substrate, cured with heat and UV radiation – wherein the substrate is a steel plate.

13. **Regarding claims 1 and 24:** Baccei teach that (Ai) may be an (cyclo)aliphatic polyisocyanate, wherein cycloaliphatic polyisocyanate is exemplified by example 7 – however, isophorone diisocyanate is never disclosed by Baccei.

14. As discussed in paragraph 6, herein incorporated by reference, Schwalm et al also teach UV curable coatings comprising acrylate-functional urethane prepolymer. What's more, Schwalm et al teach that these coatings preferably exhibit "high weathering resistance." Therefore component (Ai) preferably consists of (cyclo)aliphatic compounds – specifically isophorone diisocyanate (Col 2 lines 5-10; col 3 lines 54-58, 66-67).

15. Although Schwalm et al do not explicitly state that enhanced weatherability is attributed to the (cyclo)aliphatic polyisocyanate, one of ordinary skill would understand that aromatic polyisocyanate is not preferred in coatings which will be exposed to the sun since they tend to yellow over time while aliphatic polyisocyanate based coatings resist this tendency. Therefore, it would have been obvious to limited the polyisocyanate of Baccei to just the (cyclo)aliphatic compounds since Baccei teaches them as suitable reactants, and one would be motivated to exclude aromatic polyisocyanate since this improves the coating's resistance to yellowing.

#### ***Response to Arguments***

16. Applicant's arguments filed 4/3/2009 have been fully considered but they are not persuasive. Applicants argue the claimed invention has not been rendered obvious by Baccei ('526) in view of Schwalm et al ('459) for three different reasons.

- a) The first being that while Baccei list (cyclo)aliphatic polyisocyanate, all but one example use aromatic diisocyanate, and therefore there is no motivation to only select the (cyclo)aliphatic diisocyanate from Baccei - as required by claim 1.
- b) Applicants' argue Baccei fail to teach the claimed OH:NCO ratio.
- c) Finally, applicants state Schwalm et al fail to provide motivation as to why one would select diluents comprising 5- or 6-membered heterocycles instead of 5- or 6-membered carbocycles since Schwalm et al treat them as "interchangeable". Furthermore, applicants' have discovered an unexpected advantage in using said heterocycles instead of carbocycles – as evidenced by applicants' examples.

17. In response to issue a), it should first be noted that a reference is not limited what its examples teach, and in view of the fact that Schwalm et al teach a preference for (cyclo)aliphatic compounds, as discussed in paragraphs 14 and 15 – herein incorporated by reference, the position is maintained that sufficient motivation exist to select (cyclo)aliphatic polyisocyanate over aromatic polyisocyanate. Furthermore, it should be noted that claim 1 does not exclude the presence of aromatic polyisocyanate – it merely requires the presence of "at least one aliphatic" polyisocyanate.

18. In response to issue b) and contrary to applicants assertions, column 4 lines 60+ of Baccei teach that the (A) urethane acrylate is produced at an OH:NCO ratio of at least 1.

19. Regarding issue c), it is noted that Schwalm et al teach component (Bii) is selected from both carbocycle and heterocycle compounds, however, Schwalm et al also teach a clear preference for heterocycle compounds, specifically stating that "very particular preference is given to the use as component [Bii] of trimethylolpropane monoformal acrylate."

20. Therefore, while applicants' alleged improvement in scratch resistance has been noted, it fails to overcome the current prima facie case of obviousness since the selection of heterocycle over carbocycle is not unobvious - based on column5 lines 42-44 of Schwalm et al - and one would reasonably expect the rendered obvious composition based on heterocyclic diluents to exhibit the same properties as alleged by applicants. Furthermore, claim 1 does not exclude carbocycle based diluents.

***Conclusion***

21. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

22. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BENJAMIN J. GILLESPIE whose telephone number is (571)272-2472. The examiner can normally be reached on 8am-5:30pm.



24. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

25. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Benjamin J Gillespie/  
Examiner, Art Unit 1796

/Vasu Jagannathan/  
Supervisory Patent Examiner, Art Unit 1796